DOCUMENT RESUME

ED 180 870 SO 012 208

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TITLE Communications While Researching: A Profile of Social Scientists from Three Sydney Universities.
PUB DATE Jan 79
NOTE 14p.: Paper presented at the Australian and New Zealand Association for the Advancement of Science Congress (Auckland, New Zealand, January, 1979)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Communication Problems; Foreign Countries; Information Needs; *Publications; *Researchers; Research Needs; *Research Problems; *Social Science Research
IDENTIFIERS *Australia

ABSTRACT

The communication activities and problems of Australian social scientists in research and publication are reported. The sample consisted of 52 social scientists from three universities in Sydney who were interviewed individually. Participants responded to questions concerning their research interests, how they kept abreast of development in their specific disciplines, and difficulties in keeping up to date. Questions concerning respondents' own publications, the medium in which their research was printed, reasons for choosing a particular medium, and whether the communication activities associated with the publication were satisfactory, were also included. Results indicated that the communication activities of the social scientist while researching involve a highly select examination of relevant literature, contact with researchers overseas and in Australia, and reports of results in seminars and conferences. Overseas publication, 80% of the time in relevant journals, completes the cycle. The major communication problem is being able to keep up with the printed word. Automated retrieval systems are not helpful because the major portion of the literature cited is housed overseas. Implications are for the development of an informal communication network which would condense the range of information originating overseas and make it available to social scientists in Australia. (Author/KC)

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COMMUNICATIONS WHILE RESEARCHING:

A Profile of Social Scientists from Three Sydney Universities

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Paper presented to Section 33: Communication, at the Australian and New Zealand Association for the Advancement of Science Congress,

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Introduction

Science is, by its very nature, conservative. It is extremely selective in its membership; requires very lengthy periods of schooling for entry; is very rigid in its methods and procedures; and produces only a single, tangible output - words. Hence science has long been resistant to change.

Despite this inertia, many scientists recognise for themselves that, although the process of discovering basic knowledge is immutable, the transfer and flow of such knowledge to all concerned is far from ideal. More effective scientific communication, however, can only be advanced by understanding the contemporary world of the scientist first and then working within that framework in order to win small but lasting gains. Radical, sweeping or highly innovative changes, no matter what their intrinsic merit, will soon be torpedoed by the tradition-bound nature of the institution of science itself. This paper reflects an approach to scientific communications which treats information as a resource that links a variety of activities, both intellectual and material. It departs from the more usual attempts at simple exploitation of information transfer systems to first examining and then developing the relevant forces which are most likely to sustain good scientific communications into the near future.

Attempts at overcoming the problems of scientific communication go back some two decades now; but apparently little remedial action has taken place as a result (Compton, 1973). The problem today is further compounded by the business of science itself - the escalating costs of the knowledge industry; its technological advances, e.g. computer-based systems; and in its own efficiency in production that leads to the continuous spiral of knowledge and the ever-growing volume of scientific information.

To take some examples from data based upon the American scientific community, the National Science Foundation (1976) has shown that total communication resource expenditures (on scientists as both authors and users, and by publishers, libraries and secondary services) by number of scientists, averaged out to $2000 per scientist in 1960 whereas it rose to $3000 per scientist in 1974, using constant dollar figures. With an estimated 1.2 million scientists in the U.S. in 1960, rising to 2.0 million by 1974, this represents a bill of some $3,600 million in those 14 years alone. The cost of producing an annual scientific journal has also been rising by 8.9 per cent per annum, with only a 1.9 per cent increase in their growth rate. However, the world increase in number of journals produced has grown more substantially in recent years than in the U.S. such that, in a recent study by the O.E.C.D. on its member states, the predicted increase in new knowledge internationally is expected to be in the order of an annual 12.5 per cent rise (Anderla, 1973). Anderla went on to say that by 1980, powerful automated information

systems on an industrial scale will be set up and accessible to the knowledge industry, which will then begin using them extensively. "As a result it...(the knowledge industry)... will undergo rapid, radical change and its future will then seem very different from what we believe it to be at present" (Anderla, 1973, p.85). Only the unit costs at present prohibit the widespread usage of automated systems over manual/mechanical means of transfer; but once they reach parity, the computer age of scientific communication will begin independently of official policy interventions.

The above statistical indicators and predictions suggest how the culture of scientific communications is affecting how knowledge will be exchanged now and in the near future. Such 'future shock' for the scientist is worrisome, given his conventional communication behaviours: going to the library simply to browse through the literature, for instance.

How scientists view these developments and how they are actively coping with them remains little understood. The research reported here is a first step in monitoring how one group of such persons - academic social scientists - are faring in their scientific communication practices today.

Social Scientists

Differences in communication activities amongst the various scientific disciplines has been shown to occur. In the U.S. the largest growth in number of scientific book titles produced between 1960 and 1974 was in the fields of Sociology and Economics, with an increase of 780 per cent

during those 14 years (N.S.F., 1976). That survey also revealed social scientists to be heavy subscribers to scientific journals with nearly twice as many subscriptions taken out by them as compared to life scientists, and more than three times the rate for physical scientists. Social scientists also take longer to report on their work than do physical scientists, with publication lags being on the average of 16 months for the physical sciences and 26 months for the social sciences (Garvey, Lin and Nelson, 1971). Social science journals reject more fiercely than do the physical science journals; and social scientists are in the habit of recycling their manuscripts until such time as a journal will finally accept them. It is thus suspected that social scientists may have different communication behaviours while they are engaged in their research as distinct from the formal dissemination process. The investigation here is about such processes.

The sample drawn for the study was taken from the ranks of academic social scientists employed by the three universities in metropolitan Sydney. In order to reliably distinguish just who are social scientists, the Academy of the Social Sciences in Australia, which is a select body of the most distinguished social scientists in that country, was consulted as to how it determined the various social disciplines from which its Fellows were elected to membership. The following fields were thus chosen to be included in the present study: Anthropology, Human Geography, Sociology, Economics, Economic History, Business Administration, Law,

Political Science, Education and Psychology. As each of these fields was well established within the three Sydney universities, their respective calendars were consulted in order to draw actual names as potential respondents for the survey. A working pool of 507 individuals was ascertained in this way, where 111 held senior positions, i.e., Professor, Associate Professor or Reader, and 396 held junior positions, i.e., Senior Lecturer or Lecturer, as of the 1978 listings. The proportions of social scientists at each of the three universities were about equal, whereas their numbers within any one field showed considerable variance. Therefore several fields were then grouped together to inflate their particular numbers and a systematic sample of 1 in 3 was drawn which was also made to reflect the ratio of senior to junior staff in the total population.

A sample of 150 academics was invited by letter to take part in the study. About half the contacted sample did in fact reply, and of those, about 20 per cent declined to take part for one reason or another. A total of 52 persons thus constitutes the sample of social scientists taking part in this study. Although their distribution is fairly representative of total numbers within the three universities, as well as by rank, the fields themselves are not so representative, e.g., Education was oversampled and Political Science and Law undersampled.

The 52 social scientists were all interviewed in their own offices by the researcher, who used a semi-structured

interview schedule and took down answers to the questions posed in the interview. A content analysis was then performed for each question to provide the data base of the study.

Results

Respondents were first asked to briefly state the nature and extent of their research interests. Most listed one or sometimes two active research projects which took up about one quarter of their weekly time, the remainder going towards teaching and/or administrative responsibilities. Each person was also asked whether or not he was collaborating with others on the nominated research and just under 60 per cent answered in the affirmative. However, about half of the junior staff reported active collaboration whereas two-thirds of the senior staff mentioned that they collaborate in their current research programmes. Twice as many of these collaborators were located overseas as were living in Australia.

The interviewees were then asked about keeping up to date with developments in their specific research fields. The usual methods of following the literature, attending conferences, use of abstracting services, being informed by students and going overseas were frequently mentioned. Roughly half of the sample also voluntarily asserted that they subscribed to journals relevant to their research endeavours. Of the total mentionings, about half referred to printed sources, whereas the other half referred directly

to contacts with people. Each individual was also specifically asked whether he had ever used a computer-based retrieval system as part of his research work. 42 per cent said that they had, but many qualified such usage by indicating that they did when last overseas but had not done so in Australia. Many of those who said no to this question, when asked if they contemplated such usage in the future, replied with an equal no to that question.

The major difficulty in keeping up to date, as expressed by the respondents, was in not having enough time, which received three times as many mentions as the second most favoured category - that of shear amount of material to cover. Quite a few mentions were made of the unavailability of the literature, particularly in the university libraries, whereas others said that the isolation of being in Australia was a contributing factor.

The questioning then turned to how respondents kept up to date through direct contacts with people as sources of information. Two-thirds of the sample found this relatively easy to do, although the junior staff had proportionately more difficulty than did senior staff, especially in making contacts overseas. Sustaining such contacts was markedly easier for senior than for junior staff as all but one senior academic mentioned that he was part of an active communication network that kept its associates informed of one another's work. Each respondent was asked whether in fact he was part of a communication network, and 75 per cent indicated positively to that

question. Twice as many of these networks were reported as being informal in nature rather than formal, i.e., information was spread by word of mouth, newsletters or visitations, rather than by a legally constituted body or professional organization.

When each respondent was asked to detail a specific research study of theirs that already had been published, the majority nominated a recent publication for this case study. They were then asked a series of questions about this particular piece of research in regard to the communication activities associated with it. Each person was first asked to state what form of communication was most influential in launching that particular course of study. About 30 per cent mentioned the printed word, and several others replied that this study had been directly commissioned to them. A further 50 per cent suggested that the deciding factor was a personal discussion with either a colleague (20 per cent) or in their role as a teacher or thesis adviser (30 per cent). The remaining respondents said that the problem under study had come about as a result of their continuing work from student days.

Respondents were asked next to indicate the actual form of publication and why they chose that medium for dissemination of this research study. Almost 80 per cent were printed in journals, and only 3 per cent took the form of a report. Furthermore, 75 per cent of those journals originate from overseas. The specific reasons for having chosen a particular journal were divided 2 to 1 in favour

of that journal's relevance to the research in question and/or its prestige in being a core journal in the field. The second reason was that it had been solicited by the editor who knew of the person, and/or another person had advised the respondent to submit it there. A few others mentioned that they had published in that journal before, and only one person in the sample suggested that he chose the journal for its speedy publication time.

Finally, each respondent was asked to retrospectively comment as to whether or not he would change any of the communication activities associated with that research study. About two-thirds said that they would not, the most common reason being the satisfaction with that study as a whole. Those who would have changed suggested that they would have liked more criticism prior to its publication or to have had the chance to discuss their research earlier in its life span.

Discussion

The academic social scientist in Sydney appears to be containing the communication problem in two related ways: by struggling to keep abreast of the literature and by sustaining contacts with co-workers and personal acquaintances alike. Furthermore, these activities are heavily associated with links overseas, which is generally more arduous for the junior than for the senior members of staff to maintain. The social scientist here tends to look to the more informal channels of communication over that of

the printed word once his research is in progress, and is inclined to publish his work overseas. He also shows a rather indifferent attitude towards the advent of computer retrieval systems in regard to their efficiency in keeping him informed.

In summary, the communication activities of the social scientist while researching proceed in the following manner: highly select examination of the literature, due primarily to time constraints and somewhat less to availability locally; simultaneous tuning into others, both overseas and in Australia, to enrich the information transfer process and to keep the human channels open; reporting results locally to conferences and seminars prior to publication; and finally publishing overseas to complete the communication cycle.

The major communication problem for the social scientist is being able to keep up with the printed word. Automated retrieval systems do not, however, appear to be the immediate answer as the bulk of this literature is housed overseas, making availability the prime constraint rather than speed of retrieval.

The resource that must now be developed here is the informal communication network. It forms, not on the basis of satisfying information needs not fulfilled by the formal channels, but simply operates to both condense the range of information originating overseas and to bring it to this country and out to those who need to know. A recent O.E.C.D.

Examiners' Report on Science and Technology in Australia has also testified to this need. In highlighting the state of social science research in Australia, they have stated that "...we had a feeling that social science research is extremely dispersed throughout the Australian system, under-supported and insufficiently related to other aspects of scientific activity" (O.E.C.D., 1974, p.41). Studies of these informal communication networks are imperative if they are to be effectively developed as an added resource within the links of scientific communication.

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